

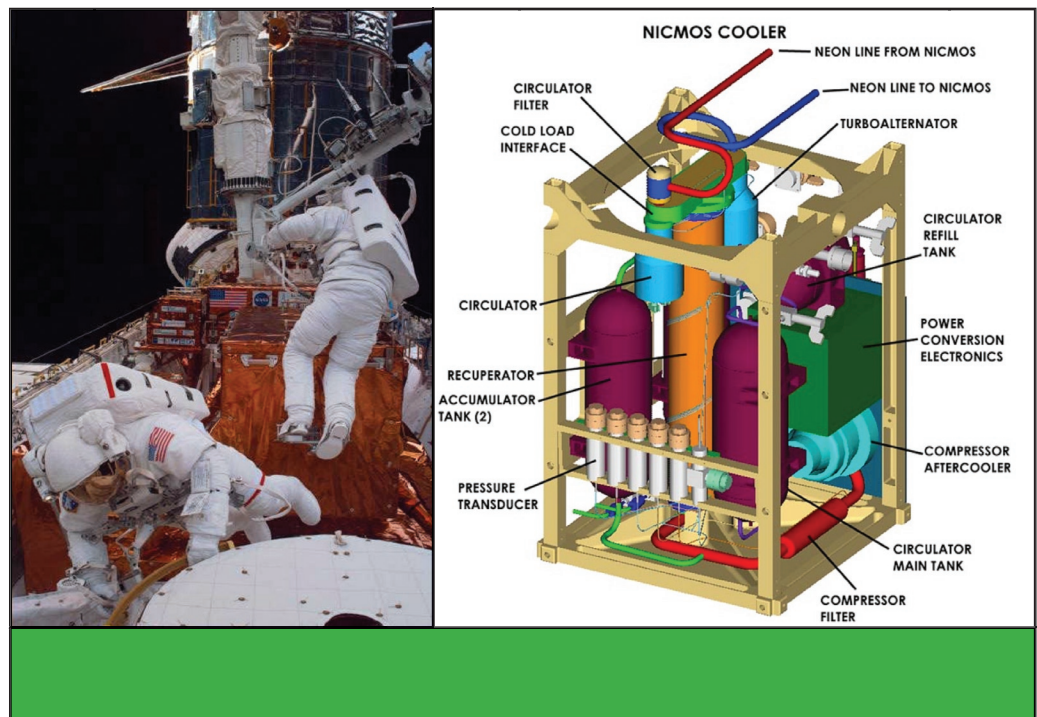


Air Force Research Laboratory | AFRL

Science and Technology for Tomorrow's Air and Space Force

Success Story

NEAR-INFRARED CAMERA AND MULTI-OBJECT SPECTROMETER CRYOCOOLER



The Space Vehicles Directorate's Space Cryogenic Technology Team contributed to the development and demonstration of critical cryocooler technology that helped revive the Near Infrared Camera and Multi-Object Spectrometer (NICMOS) instrument that failed on the Hubble Space Telescope.



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Accomplishment

The team's expertise, groundbreaking technology development, essential Air Force hardware, and laboratory characterization of prototype hardware for this cooler technology to the National Aeronautics and Space Administration (NASA) helped revive the NICMOS infrared instrument. The effort culminated in March 2002 with a space walk and installation by NASA astronauts on the Hubble Space Telescope.

Background

The directorate participated in the development of a turbo reverse Brayton cryocooler, which helped NASA return the NICMOS camera to its optimum operating temperature. Directorate scientists expect the new cooler to nearly double the NICMOS' operational lifetime.

The directorate's Space Cryogenic Technology Team was instrumental in the development of the fundamental technology for reverse Brayton cryocoolers. The Directorate coordinated the cryocoolers development through a series of Small Business Innovation Research programs and Air Force- and Missile Defense Agency-sponsored cryocooler development programs.

Space Vehicles
Support to the Warfighter

Additional information

To receive more information about this or other activities in the Air Force Research Laboratory, contact TECH CONNECT, AFRL/XPTC, (800) 203-6451 and you will be directed to the appropriate laboratory expert. (02-VS-13)